



THE UNIVERSITY *of* EDINBURGH

## Edinburgh Research Explorer

# Medication Without Harm: WHO's Third Global Patient Safety Challenge

### Citation for published version:

Donaldson, LJ, Kelley, E, Dhingra-Kumar, N, Kieny, MP & Sheikh, A 2017, 'Medication Without Harm: WHO's Third Global Patient Safety Challenge', *The Lancet*, vol. 389, pp. 1680.  
[https://doi.org/10.1016/S0140-6736\(17\)31047-4](https://doi.org/10.1016/S0140-6736(17)31047-4)

### Digital Object Identifier (DOI):

[10.1016/S0140-6736\(17\)31047-4](https://doi.org/10.1016/S0140-6736(17)31047-4)

### Link:

[Link to publication record in Edinburgh Research Explorer](#)

### Document Version:

Publisher's PDF, also known as Version of record

### Published In:

The Lancet

### General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

### Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact [openaccess@ed.ac.uk](mailto:openaccess@ed.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.



*\*Neil R Poulter, Daniel T Lackland*

School of Public Health, Imperial College London, London W12 7RH, UK (NRP); and Department of Neurology, Medical University of South Carolina, Charleston, SC, USA (DTL) n.poulter@imperial.ac.uk

NRP is the President of the International Society of Hypertension for 2016–18 and has received research grants and speaker fees from Servier. DTL declares no competing interests. The May Measurement Month is mainly funded by the International Society of Hypertension, with additional funds (US\$40 000) to be received from the US Centers for Disease Control and Prevention. The International Society of Hypertension is supported by six corporate members, including device manufacturers, who pay a small annual membership fee to the International Society of Hypertension to support all its global work to promote the advancement of scientific research and knowledge in hypertension and associated cardiovascular diseases. Negotiations to receive blood pressure measurement devices from three companies are in progress, which may include 20 000 machines from Omron.

- 1 GBD 2013 Risk Factors Collaborators, Forouzanfar MH, Alexander L, Anderson HR, et al. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990–2013: a systematic analysis for the Global Burden of Disease Study. *Lancet* 2013; **386**: 2287–323.
- 2 Olsen MH, Angell SY, Asma S, et al. A call to action and a lifecourse strategy to address the global burden of raised blood pressure on current and future generations: the Lancet Commission on hypertension. *Lancet* 2016; **388**: 2665–712.
- 3 Yusuf S, Wood D, Ralston J, Reddy KS. The World Heart Federation's vision for worldwide cardiovascular disease prevention. *Lancet* 2015; **386**: 399–402.

- 4 Chow CK, Teo KK, Rangarajan S, et al. Prevalence, awareness, treatment, and control of hypertension in rural and urban communities in high-, middle-, and low-income countries. *JAMA* 2013; **310**: 959–68.
- 5 Rapsomaniki E, Timmis A, George J, et al. Blood pressure and incidence of twelve cardiovascular diseases: lifetime risks, healthy life-years lost, and age-specific associations in 1·25 million people. *Lancet* 2014; **383**: 1899–911.
- 6 NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in blood pressure from 1975 to 2015: a pooled analysis of 1479 population-based measurement studies with 19·1 million participants. *Lancet* 2017; **389**: 37–55.
- 7 Group SR, Wright JT, Jr, Williamson JD, et al. A randomized trial of intensive versus standard blood-pressure control. *N Engl J Med* 2015; **373**: 2103–16.
- 8 Adler AJ, Prabhakaran D, Bovet P, et al. Reducing cardiovascular mortality through prevention and management of raised blood pressure: a World Heart Federation roadmap. *Glob Heart* 2015; **10**: 111–22.
- 9 WHO. Sixty-Sixth World Health Assembly Geneva, 20–27 May 2013 Resolutions and Decisions. 2013. [http://apps.who.int/gb/ebwha/pdf\\_files/WHA66-REC1/WHA66\\_2013\\_REC1\\_complete.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA66-REC1/WHA66_2013_REC1_complete.pdf) (accessed April 10, 2017).
- 10 Poulter NR, Schutte AE, Tomaszewski M, Lackland DT. May Measurement Month: a new joint global initiative by the International Society of Hypertension and the World Hypertension League to raise awareness of raised blood pressure. *J Hypertension* 2017; **35**: 1126–28.
- 11 Poulter NR, Prabhakaran D, Caulfield M. Hypertension. *Lancet* 2015; **386**: 801–12.
- 12 Lewington S, Clarke R, Qizilbash N, et al. Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies. *Lancet* 2002; **360**: 1903–13.



## Medication Without Harm: WHO's Third Global Patient Safety Challenge



For the WHO Global Patient Safety Challenge on Medication Without Harm see <http://www.who.int/patientsafety/medication-safety/en/>

In 1960, Alphonse Chapanis, turned his attention from engineering to health care. In a study of medication-related errors in a 1100-bed hospital,<sup>1</sup> he and his colleague identified seven sources of such errors potentially leading to harm to a patient: medicine omitted, or given to the wrong patient, at the wrong dose, as an unintended extra dose, by the wrong route, at the wrong time, or as the wrong drug entirely. Almost 60 years later, these same types of errors still happen worldwide. Later that year in a follow-up policy paper,<sup>2</sup> Chapanis identified four areas of recommendations that could prevent harm and remain relevant today: written communication, medication procedures, the working environment, training, and education. Indeed, it is difficult to avoid the conclusion that had the recommendations from this revelatory patient safety research been assiduously followed over the past five decades, hundreds of thousands fewer patients would have been killed or seriously harmed by the medicines intended to make them well.

Beginning in 2004, WHO, working in partnership with the then World Alliance for Patient Safety, initiated two Global Patient Safety Challenges, Clean Care is Safer Care<sup>3</sup> and Safe Surgery Saves Lives.<sup>4</sup> These challenges mobilised worldwide commitment and action to reduce health-care-associated infections and risk associated with surgery, respectively. At the second Global Summit of Health Ministers on Patient Safety in Bonn, Germany, on March 29, 2017, the Director-General of WHO announced that the Third Global Patient Safety Challenge, Medication Without Harm, would address medication safety.<sup>5</sup>

The previous challenges secured strong and early commitment from health ministers, professional bodies, regulators, health leaders, civil society, and health-care practitioners. The action required to deliver the goals of each was broadly similar: an evidence-based analysis of the key problems and solutions; an invitation to WHO member states and other relevant parties to pledge, or sign-up, to address the aims of the challenge; high-profile actions to generate passion and enthusiasm; facilitation

of implementation by the WHO secretariat and associated experts and advisers; and strong leadership and extensive internal and external communication. Formal evaluations of impact and outcome were more complex to undertake, but studies that were done gave encouraging results.<sup>6,7</sup> For example, Clean Care is Safer Care eventually secured ministerial pledges that covered 85% of the world's population. This campaign took on many of the characteristics of a social movement.

Now the Third Global Patient Safety Challenge seeks the commitment of health ministers, health-system leaders, and a range of stakeholders, including educational institutions, experts, medicines regulators, researchers, pharmaceutical companies, patient representative bodies, and professional organisations. Its goal will be to reduce the level of severe, avoidable harm related to medications by 50% over 5 years, globally.

The action will fall into three categories. First, countries will be asked to target three priority areas: high-risk situations, polypharmacy, and transitions of care. Second, health ministries will be invited to convene experts in their countries to design specific programmes of action for improving safety in each of four domains in which a medications can cause inadvertent harm: health care professionals' behaviour; systems and practices of medication; medicines; patients and the public. Third, WHO will use its global convening and advocacy role to pursue successful outcomes in a range of areas, including: strengthening the quality of data to monitor medication-related harm; providing guidance and developing strategies, plans, and tools to ensure that the medication process has the safety of patients at its core in all health-care settings; producing a strategy for setting out research priorities; monitoring and evaluating the impact of the challenge; continuing to engage with regulatory agencies and international actors to improve medication safety through improved packaging and labelling; and designing tools and technologies that empower patients to safely manage their own medications.

Health ministers who commit to address this challenge will be invited to designate a national coordinator to spearhead the Global Patient Safety Challenge on Medication Without Harm in their country. Excellent professional leadership will be crucial for success. Throughout the implementation process, WHO will also seek to emphasise the special problems of medication-related harm in low-income and middle-income countries.

Worldwide, medication errors cost an estimated US\$42 billion annually.<sup>8</sup> This is 0.7% of the total global health expenditure.<sup>8</sup> A conservative estimate by the US Institute of Medicine, in 2007, gave the total additional annual cost of treating hospitalised patients in the USA as \$3.5 billion.<sup>9</sup> This serious source of avoidable harm and death has stalked health care since it was clearly delineated 60 years ago. The time to stop it is long overdue.

Liam J Donaldson, Edward T Kelley, Neelam Dhingra-Kumar, Marie-Paule Kieny, \*Aziz Sheikh

Department of Epidemiology and Public Health, London School of Hygiene & Tropical Medicine, London, UK (LJD); World Health Organization, Geneva, Switzerland (ETK, ND-K, M-PK); and Centre of Medical Informatics, Usher Institute of Population Health Sciences and Informatics, University of Edinburgh, Edinburgh EH8 9AG, UK (AS)  
aziz.sheikh@ed.ac.uk

LJD is WHO Patient Safety Envoy and is paid travel and subsistence for WHO meetings, and for some of his advisory work. ETK is WHO's Director of Service Delivery and Safety. ND-K is WHO's Coordinator of Patient Safety and Quality Improvement. M-PK is WHO's Assistant Director-General for Health Systems and Innovation. AS is a member of WHO's Third Global Patient Safety Challenge and chairs its Monitoring and Evaluation Working Group. We declare no other competing interests. The authors alone are responsible for the views expressed in this Comment and they do not necessarily represent the views, decisions, or policies of the institutions with which they are affiliated.

© 2017 World Health Organization; licensee Elsevier. This is an Open Access article published under the CC BY 3.0 IGO license which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. In any use of this article, there should be no suggestion that WHO endorses any specific organisation, products or services. The use of the WHO logo is not permitted. This notice should be preserved along with the article's original URL.

- 1 Safren MA, Chapanis A. A critical incident study of hospital medication errors. Part one. *Hospitals* 1960; **34**: 32–34, 57–58, 60, 62, 64, 66.
- 2 Safren MA, Chapanis A. A critical incident study of hospital medication errors. Part two. *Hospitals* 1960; **34**: 53, 65–66, 68.
- 3 Allegranzi B, Storr J, Dziekan G, et al. The first global patient safety challenge "Clean care is safer care": from launch to current progress and achievements. *J Hosp Infect* 2007; **65** (suppl 2): 115–23.
- 4 World Alliance for Patient Safety. The second global patient safety challenge: safe surgery saves lives. *Int J Risk Safety Med* 2008; **20**: 181–82.
- 5 WHO. WHO launches global effort to halve medication-related errors in 5 years. March 29, 2017. <http://www.who.int/mediacentre/news/releases/2017/medication-related-errors/en/> (accessed April 10, 2017).
- 6 Allegranzi B, Gayet-Ageron A, Damani N, et al. Global implementation of WHO's multimodal strategy for improvement of hand hygiene: a quasi-experimental study. *Lancet Infect Dis* 2013; **13**: 843–51.
- 7 Haynes AB, Weiser TG, Berry WR, et al. A surgical safety checklist to reduce morbidity and mortality in a global population. *N Engl J Med* 2009; **360**: 491–99.
- 8 Aitken M, Gorokhovich L. Advancing the responsible use of medicines: applying levers for change. IMS Institute for Healthcare Informatics, 2012. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2222541](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2222541) (accessed April 10, 2017).
- 9 Aspden P, Wolcott J, Bootman JL, Cronenwett LR, eds. Institute of Medicine, Committee on Identifying and Preventing Medication Errors, Board on Health Care Services. Preventing medication errors: quality chasm series. Washington, DC: The National Academies Press, 2007.